

Retroreflective sensor

ML100-55/103/115b

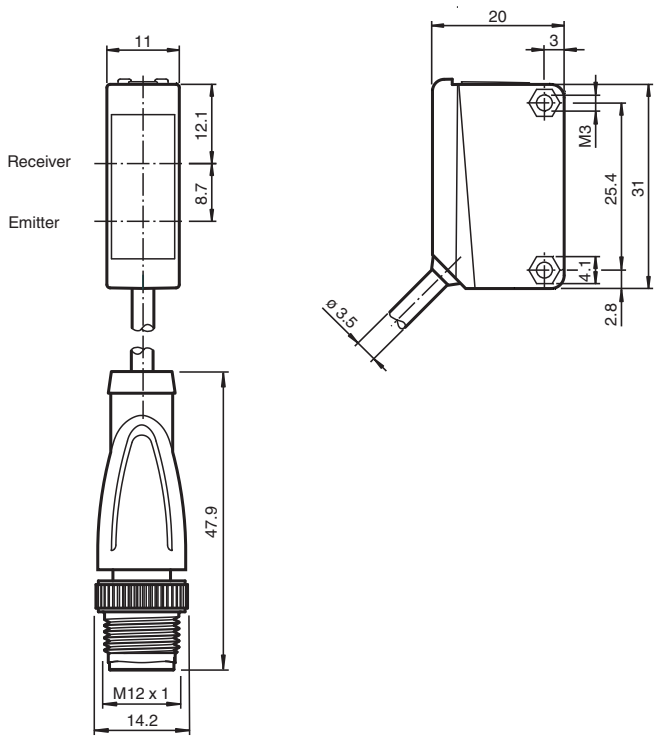
- Miniature design
- Easy to use
- Full metal thread mounting
- Clearly visible LEDs for Power ON, switching state and weak signal indication
- Not sensitive to ambient light

Retroreflective sensor with polarization filter, plastic housing, 5 m detection range, red light, sensitivity adjuster, light/dark on, DC version, PNP output, fixed cable with M12 plug

Function

The ML100 series is characterized by its miniature housing with integral, all-metal threaded bushings. All versions are equipped with a visible red transmitter LED. This greatly simplifies installation and commissioning. The switching states are easily visible from all directions thanks to the highly visible LEDs.

Dimensions



Technical Data

General specifications	
Effective detection range	0 ... 5 m
Reflector distance	0.01 ... 5 m
Threshold detection range	7 m
Reference target	H50 reflector

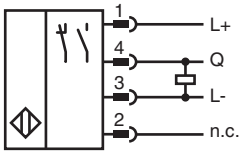
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Technical Data

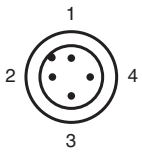
Light source		LED
Light type		modulated visible red light
Polarization filter		yes
Diameter of the light spot		approx. 500 mm at a distance of 7 m
Opening angle		approx. 4 °
Optical face		frontal
Ambient light limit		EN 60947-5-2:2007+A1:2012
Functional safety related parameters		
$MTTF_d$		860 a
Mission Time (T_M)		20 a
Diagnostic Coverage (DC)		0 %
Indicators/operating means		
Operation indicator		LED green: power on
Function indicator		LED yellow: lights up when receiving the light beam ; flashes when falling short of the stability control; OFF when light beam is interrupted
Control elements		sensitivity adjustment
Control elements		Light-on/dark-on changeover switch
Electrical specifications		
Operating voltage	U_B	10 ... 30 V DC
Ripple		max. 10 %
No-load supply current	I_0	< 20 mA
Output		
Switching type		The switching type of the sensor is adjustable. The default setting is: light-on
Signal output		1 PNP output, short-circuit protected, reverse polarity protected, open collector
Switching voltage		max. 30 V DC
Switching current		max. 100 mA , resistive load
Voltage drop	U_d	≤ 1.5 V DC
Switching frequency	f	1000 Hz
Response time		0.5 ms
Conformity		
Product standard		EN 60947-5-2
Approvals and certificates		
EAC conformity		TR CU 020/2011
UL approval		cULus Listed, Class 2 Power Source or listed Power Supply with a limited voltage output with (maybe integrated) fuse (max. 3.3 A according UL248), Type 1 enclosure
CCC approval		CCC approval / marking not required for products rated ≤36 V
Ambient conditions		
Ambient temperature		-30 ... 60 °C (-22 ... 140 °F)
Storage temperature		-40 ... 70 °C (-40 ... 158 °F)
Mechanical specifications		
Housing width		11 mm
Housing height		31 mm
Housing depth		20 mm
Degree of protection		IP67
Connection		300 mm fixed cable with 4-pin, M12 x 1 connector
Material		
Housing		PC (Polycarbonate)
Optical face		PMMA
Mass		approx. 20 g
Tightening torque, fastening screws		0.6 Nm
Cable length		0.3 m

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Connection



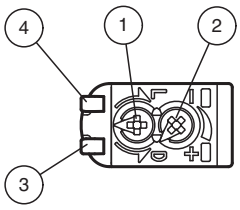
Connection Assignment



Wire colors in accordance with EN 60947-5-2

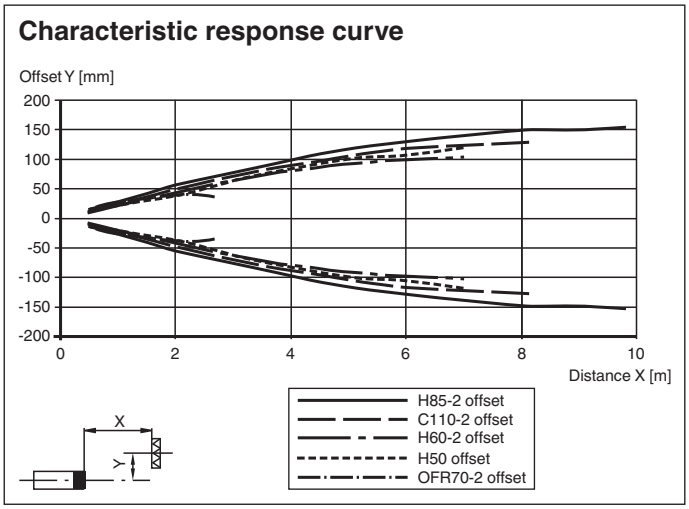
1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)

Assembly



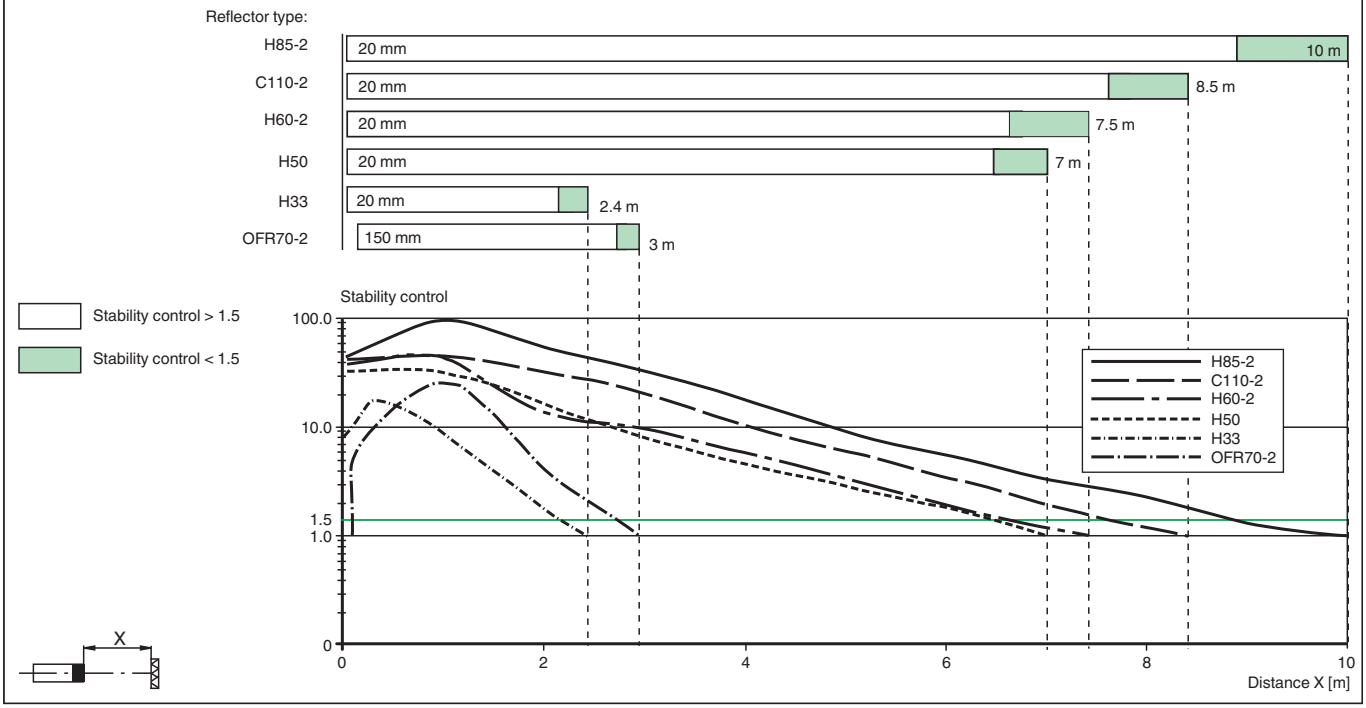
1	Light-Dark-switching	
2	Sensitivity adjuster	
3	Signal display	yellow
4	Operating display	green

Characteristic Curve



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Relative received light strength (typical)



Accessories

	**OMH-ML100-09**	Mounting aid for round steel ø 12 mm or sheet 1.5 mm ... 3 mm
	**OMH-F10-ML100**	Mounting aid for ML100 series
	**OMH-ML100-01**	Mounting aid for ML100 series, mounting bracket
	**OMH-ML100-02**	Mounting aid for ML100 series, mounting bracket
	**OMH-ML100-03**	Mounting aid for round steel ø 12 mm or sheet 1.5 mm ... 3 mm
	**OMH-ML100-04**	Mounting aid for ML100 series, mounting bracket
	**OMH-ML100-05**	Mounting aid for ML100 series, mounting bracket
	**OMH-10**	Mounting aid for ML100 series
	**REF-C110-2**	Reflector, round ø 84 mm, central mounting hole
	**REF-H60-2**	Reflector with mounting holes
	**REF-H33**	Reflector with screw fixing
	**OFR-70-2**	Reflective tape 70 mm x 70 mm

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Accessories

	**OMH-ML100-S1**	Mounting bracket
	**OMH-ML100-08**	Mounting aid for ML100 series, Snap-in
	**REF-H85-2**	Reflector, rectangular 84.5 mm x 84.5 mm, mounting holes
	**REF-H50**	Reflector, rectangular 51 mm x 61 mm, mounting holes, fixing strap
	**OFR-100/100**	Reflective tape 100 mm x 100 mm

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